



UW PACC

Psychiatry and Addictions Case Conference

UW Medicine | Psychiatry and Behavioral Sciences

TREATMENT OF TOBACCO USE DISORDERS

E-CIGS & APPS

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GENERAL DISCLOSURES

The University of Washington School of Medicine also gratefully acknowledges receipt of educational grant support for this activity from the Washington State Legislature through the Safety-Net Hospital Assessment, working to expand access to psychiatric services throughout Washington State.

SPEAKER DISCLOSURES

- ✓ Any conflicts of interest-none

WELCOME & THANKS

- Susan Collins PhD
 - Director UW HaRRT (Harm Reduction Research & Treatment) Center
- Jo Masterson COO
 - 2Morrow, Inc

OBJECTIVES

1. Highlight the current tobacco use in the state of WA
2. To describe state of evidence around e-cigs (or End Nicotine Delivery Systems)
3. Review use of free Smoking Cessation app
4. Urge everyone to remember to address and offer tobacco treatment at every pt visit!

WA STATE SMOKING DATA

- **Cigarette smoking**
 - **Adults 14% (US 17.1%)**
 - **HS Students 11% (US 10.8%)**
- **Other Products**
 - **E-ciggs: Adults 2.5% (2015); 12 Graders 20% (2016)**
 - **Smokeless: Adults 2.2%; 12 Graders 6%**
- **Tobacco-related deaths: 8,300**

WA STATE SMOKING DATA

- Rates of smoking have declined since 2002
 - 10/12 graders
 - 1999: 25/35%
 - 2012: 10/16% (smoked cig in past 30 days)
 - 2016: 6.3/11%
- E-cig produce use decreased from 2014-2016
 - 10th graders
 - 2014: 18%
 - 2016: 13%
- 2016 Youth do not perceive e-cigs as risky

WA STATE TOBACCO CESSATION EFFORTS

- Tobacco Taxes-ranked 8th (\$3.025/pack)
 - US Average: \$1.73/pack
- FY 2018 State & Federal Funding WA State
 - \$4,131,815 (42nd place, 6.5% of recommended amount)
 - CDC Best Practice State Spending: \$63,600,000
 - State Tobacco-Related Revenue: \$563,000,000
 - Quit line investment: \$.42/smoker (Nat'l Avg: \$2.10)
- No provision for private insurance coverage
- Minimum Age: 18

Grade: F

American Lung Association

<https://www.lung.org/our-initiatives/tobacco/reports-resources/sotc/state-grades/#hide-tab-3>


<https://www.seattletimes.com/seattle-news/washington-spends-little-to-help-the-states-900000-smokers-quit-despite-collecting-622m-in-tobacco-taxes/>

e-Cigarettes

- AKA: Electronic Nicotine Delivery Systems (ENDS)
- Designed to deliver nicotine without tobacco



Helpful or harmful?



e-Cigarettes/End Nicotine Delivery Systems

- Content
 - Propylene glycol, glycerol → mostly safe
 - Impurities and toxicants in liquid → not safe, but safer than tobacco
 - Flavorings
 - Nicotine delivered varies

****Long term effects of these additives are unknown****





e-Cigarettes Safety

- Overall risk of harm estimated $< 5\%$ compared to smoking
- Risk of cancer estimated to be $< 1\%$ compared to smoking
- Adverse effects: mouth and throat irritation, increase in blood pressure
 - More serious: exploding cartridge, lipoid pneumonia, afib in elderly pt
 - CV: increased heart rate
 - Resp: increased resistance after 5 min of use, but deemed not clinically significant
 - Nicotine poisoning: report of a child death after drinking e-liquid
 - Less calls to poison control than for tobacco exposure

****Long term effects are unknown****

E-CIGS & ADOLESCENTS

E-cigarette use is associated
with other tobacco use among
US adolescents.

N: 17,389 Pooled OR for cigarette smoking initiation: 3.62

N: 39,718 Adjusted OR for cigarette initiation: 2.7

N: 6258 OR for infrequent use-4.27 frequent use-3.51

****9 out of 10 smokers start by the age 18, and 99% start by age 26****

E-CIGS & PREGNANCY

- CDC
 - Fewer harmful substances but...
 - Unproven safety record
 - Nicotine can have health risks to babies
 - Flavorings may be harmful
- UK
 - Less smoke is better → approved e-cig for use in pregnancy for cessation

<https://www.cdc.gov/reproductivehealth/maternalinfanthealth/tobaccousepregnancy/e-cigarettes-pregnancy.htm>

Van Der Eijk, Y et al, 2018

E-CIGS AND SURGERY

- Limited and inconsistent data on physiological impact
- 3 studies found
 - Smoke vs vape → no significant difference on increased flap necrosis in rats
 - Decreased cutaneous blood flow
 - Vasospasm
- Case report:
 - mastectomy skin flap necrosis in pt using e-cigs (equivalent nicotine of 1.5 ppd)

DO E-CIGS HELP WITH QUITTING SMOKING?

England

Cross-sectional household surveys

16yo +

Data aggregated from 1200 smokers quarterly from 2006-2015

8,029,012 quit dates set during study!

- **Results**

- Success rate of quite attempts increased by 0.098% and 0.058% for every 1% increase in prevalence of e-cig use
- No clear association found between e-cig use and rate of quit attempts

E-CIGS, FINANCIAL INCENTIVES, AND SMOKING CESSATION: A *PRAGMATIC TRIAL*

- Employees of 54 companies, opt out consent
- N: 6006 randomized, 1191 participated
- Outcome: sustained abstinence rates at 6 months after quit date

Free Cessation Aids (NRT/Meds→e-Cigs if needed)	Free e-Cigs Only	Free Cessation Aids + \$600 reward for sustained abstinence	Free Cessation Aids + \$600 in redeemable funds	Usual Care (access to info motivational texts)
<ul style="list-style-type: none">•N: 1588•277 engaged (17.4%)•Abstinence Rate:<ul style="list-style-type: none">•0.5%•Adjusted 2.9%•Not superior to Usual Care or Free e-cigs	<ul style="list-style-type: none">•N: 1199•253 engaged (21.1%)•Abstinence Rate:<ul style="list-style-type: none">•1%•Adjusted 4.8%•Not superior to usual care or free cessation aids	<ul style="list-style-type: none">•N: 1198•255 engaged (21.3%)•Abstinence Rate:<ul style="list-style-type: none">•2%•P<0.001•Adjusted 9.5%	<ul style="list-style-type: none">•N: 1208•277 engaged (22.9%)•Abstinence Rate:<ul style="list-style-type: none">•2.9%•P=0.006•Adjusted 12.7%	<ul style="list-style-type: none">•N: 813•129 engaged (15.9%)•Abstinence Rate:<ul style="list-style-type: none">•0.1%•Adjusted 0.7%

**Actual use of products not known

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- Takeaways
 - There was a lack of effectiveness of free cessation aids
 - No significant difference between e-cigs and typical cessation aids
 - Financial incentives help

HARM REDUCTION AND SMOKING

- Cochrane 2016
 - 8 trials, all with NRT (no e-cig trials)
 - NRT can help reduce number of cigarettes per day (50%)
 - Use of NRT increased likelihood of quitting (RR 1.87)
 - Quality of evidence is “low”

E-CIGS AND HARM REDUCTION: CARCINOGEN EXPOSURE & E-CIGS

N=181, mostly young, male, white
Cross sectional
London, UK

Cigarettes	Ex-smokers with >6mo EC use	NRT only	Long-term Cig + EC	Dual Cig + EC
<ul style="list-style-type: none">• Same nicotine	<ul style="list-style-type: none">• Same Nicotine• Lower carcinogens	<ul style="list-style-type: none">• Same Nicotine• Lower carcinogens	<ul style="list-style-type: none">• Same Nicotine	<ul style="list-style-type: none">• Same Nicotine

Takeaways: complete cessation of smoking likely
needed to reduce carcinogen level

E-CIGS AND HARM REDUCTION

- Susan Collins PhD
 - UW HARRT Center

APPS AND SMOKING CESSATION

- Single-arm trial
- Acceptance and Commitment Based application (SmartQuit 2.0)
- N: 99
- 2 month follow-up
- No meds or other cessation tools

Results

- 84% satisfied with app
- 81% found it useful for quitting
- Quit Rates
 - 7 day quit rate: 21% (33% if completed program)
 - 30 day quite rate: 11% (28% if completed program)
- 88% reduced their smoking frequency

Takeaway: A useful tool. Longer term studies are needed.

Future work: increase engagement i.e. gaming elements?

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- <https://2morrowhealth.net/WADOH>

SUMMARY

- Talk to adolescents about E-cigs and relationship to smoking
- E-Cigs are much safer than smoking, despite fact that long-term harms are not clear
- E-Cigs can be a useful tool for smoking cessation and should be offered
- Cessation apps can be useful and should be considered. Minimal risks associated with their use.